



STIC Search Report

EIC 3600

STIC Database Tracking Number: 107798

Robert Canfield
Location Knx2A61
Art Unit: 3600
Employee# 69697
2-6840
Friday, July 10, 2009
Case Serial Number: 09/399545

From: Etelka R. Griffin
Location: EIC 3600
KNOX/4B68
Phone: 571-272-4230

Etelka.griffin@uspto.gov

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Courtlink
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No Litigation was found for Serial Number 09/399545. If you have any questions, please feel free to contact me.

Thanks
Etelka

Application Number InformationApplication Number: **09/399545****Assignments**Filing or 371(c) Date: **09/20/1999** eDanEffective Date: **09/20/1999**Application Received: **09/20/1999**

Patent Number:

Issue Date: **00/00/0000**Date of Abandonment: **00/00/0000**Attorney Docket Number: **1185R1**Status: **71 /RESPONSE TO NON-FINAL OFFICE ACTION ENTERED
AND FORWARDED TO EXAMINER**Confirmation Number: **2392**Examiner Number: **69697 / CANFIELD, ROBERT**Group Art Unit: **3600****IFW Madras**Class/Subclass: **052/786.130**Lost Case: **NO**

Interference Number:

Unmatched Petition: **NO**

L&R Code: Secrecy Code:1

Third Level Review: **NO**Secrecy Order: **NO**Status Date: **03/20/2009**Oral Hearing: **NO**Title of Invention: **SPACER FRAME FOR AN INSULATING UNIT HAVING
STRENGTHENED SIDEWALLS TO RESIST TORSIONAL TWIST**

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Continuity/Reexam Information for 09/399545

Parent Data

09399545, filed 09/20/1999 is a reissue of 08705481, filed 08/29/1996 ,now U.S. Patent #5813191

Child Data

| | | | | | |
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Application Number InformationApplication Number: **08/705481****Assignments**Filing or 371(c) Date: **08/29/1996** eDanEffective Date: **08/29/1996**Application Received: **08/29/1996**Patent Number: **5813191**Issue Date: **09/29/1998**Date of Abandonment: **00/00/0000**Attorney Docket Number: **1185A1**Status: **150 /PATENTED CASE**Confirmation Number: **1521**Examiner Number: **72537 / EDWARDS, WILLIAM**Group Art Unit: **3621**Class/Subclass: **052/786.130**Lost Case: **NO**

Interference Number:

Unmatched Petition: **NO**

L&R Code: Secrecy Code:1

Third Level Review: **NO**Secrecy Order: **NO**Status Date: **08/24/1998**Oral Hearing: **NO**Title of Invention: **SPACER FRAME FOR AN INSULATING UNIT HAVING
STRENGTHENED SIDEWALLS TO RESIST TORSIONAL TWIST**

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| 08705481 | 36M1 | 07/10/2009 | 36E1 | CHILCOT, RICHARD | ESHETE,FISSHA | REM/00/A 41 |

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http://EXPOWEB1:8001/cgi-bin/expo/GenInfo/snquery.pl?APPL_ID=08705481

Application Number InformationApplication Number: **08/705481****Assignments**Filing or 371(c) Date: **08/29/1996** eDanEffective Date: **08/29/1996**Application Received: **08/29/1996**Patent Number: **5813191**Issue Date: **09/29/1998**Date of Abandonment: **00/00/0000**Attorney Docket Number: **1185A1**Status: **150 /PATENTED CASE**Confirmation Number: **1521**Examiner Number: **72537 / EDWARDS, WILLIAM**Group Art Unit: **3621**Class/Subclass: **052/786.130**Lost Case: **NO**

Interference Number:

Unmatched Petition: **NO**

L&R Code: Secrecy Code:1

Third Level Review: **NO**Secrecy Order: **NO**Status Date: **08/24/1998**Oral Hearing: **NO**Title of Invention: **SPACER FRAME FOR AN INSULATING UNIT HAVING
STRENGTHENED SIDEWALLS TO RESIST TORSIONAL TWIST**

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| 08705481 | 36M1 | 07/10/2009 | 36E1 | CHILCOT, RICHARD | ESHETE,FISSHA | REM/00/A 41 |

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Continuity/Reexam Information for 09/399545

Parent Data

09399545, filed 09/20/1999 is a reissue of 08705481, filed 08/29/1996 ,now U.S. Patent #5813191

Child Data

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UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

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September 29, 1998

Spacer frame for an insulating unit having strengthened sidewalls to resist torsional twist

APPL-NO: 705481 (08)**FILED-DATE:** August 29, 1996**GRANTED-DATE:** September 29, 1998**CORE TERMS:** spacer, leg, stock, sheet, twist, torsional, corner, appreciated, layer, compartment ...Source: [Legal](#) > [Area of Law - By Topic](#) > [Patent Law](#) > [Find Patents](#) > [More U.S. Patents](#) > [Utility, Design and Plant Patents](#) Terms: **patno=5813191** ([Edit Search](#) | [Suggest Terms for My Search](#))View: **Custom**

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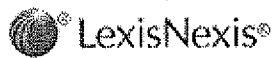
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20090091766856

Patent Number :

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| CA2213026 | A1 | 19980228 | [CA2213026] |
| MX9706462 | A | 19980228 | [MX9706462] |
| NO973946 | A | 19980302 | [NO9703946] |
| EP0826860 | A2 | 19980304 | [EP-826860] |
| AU3424397 | A | 19980305 | [AU9734243] |
| JP10088926 | A | 19980407 | [JP10088926] |
| CN1180781 | A | 19980506 | [CN1180781] |
| NZ328488 | A | 19980924 | [NZ-328488] |
| US5813191 | A | 19980929 | [US5813191] |
| EP0826860 | A3 | 19990310 | [EP-826860] |
| AU705296 | B2 | 19990520 | [AU-705296] |
| KR100255629 | B1 | 20000501 | [KR100255629] |
| CA2213026 | C | 20000523 | [CA2213026] |
| EP0826860 | B1 | 20031029 | [EP-826860] |
| AT253166 | T | 20031115 | [ATE253166] |
| DE69725806 | D1 | 20031204 | [DE69725806] |
| DK826860 | T3 | 20040216 | [DK-826860T] |
| DE69725806 | T2 | 20040819 | [DE69725806] |
| JP3933761 | B2 | 20070620 | [JP3933761] |

Title :

Spacer frame for an insulating unit having strengthened sidewalls to resist torsional twist

Patent Assignee :

PPG IND OHIO INC

PPG INDUSTRIES INC

Orig. Patent Assignee :

PPG INDUSTRIES, INC.; One PPG Place; Pittsburgh Pennsylvania 15272 (US)

Inventor(s) :

GALLAGHER RAYMOND G

Application Nbr :

1996US-0705481 19960829; 1997NZ-0328488 19970804; 1997AU-0034243
19970819; 1997MX-0006462 19970825
1997CA-2213026 19970826; 1997NO-0003946 19970827; 1997KR-0042100
19970828; 1997DK-0114901 19970828
1997DE-6025806 19970828; 1997AT-0114901 19970828; 1997CN-0117517
19970828; 1997EP-0114901 19970828
1997JP-0232190 19970828

Priority Details :

1996US-0705481 19960829

IPC :

A47G-001/00
E04B-001/62
E04B-001/80
E04C-002/54
E04G-017/06
E06B
E06B-001/00
E06B-003/263
E06B-003/54
E06B-003/66
E06B-003/663
E06B-003/67
E06B-003/673
E06B-005/00

IPC Advanced All :

E06B-003/66 [2006-01 A F I R M JP]; E04B-001/80 [2006-01 A L I R M JP];
E06B-003/663 [2006-01 A - I R M EP]; E06B-005/00 [2006-01 A L I R M JP]

E06B-003/673 [2006-01 A - N R M EP]
IPC Core All :
E04B-001/80 [2006 C L I R M JP]; E06B-003/66 [2006 C - I R M EP];
E06B-005/00 [2006 C L I R M JP]
ECLA :
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ICO Code :
P06B-003/663B10
P06B-003/663B402
P06B-003/673B2B
US Class :
ORIGINAL (O) : 052786130; CROSS-REFERENCE (X) : 052204500 052204595
052786100
FI-Terms :
E06B3/66; E06B5/00 B; E04B1/80 L
F-Terms (File forming terms) :
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2E016 EA02; 2E016 EA05; 2E016 FA00; 2E016 FA01; 2E016 FA02; 2E039 AB00;
2E001 DB03; 2E001 DC02; 2E001 DD01; 2E001 FA32; 2E001 GA07; 2E001 GA10;
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2E001 GA48; 2E001 GA55; 2E001 GA60; 2E001 GA81; 2E001 GA82; 2E001 HA11;
2E001 HB01; 2E001 HB02; 2E001 HB03; 2E001 HB04; 2E001 HC01; 2E001 HC07;
2E001 HC09; 2E001 HD03; 2E001 HD11; 2E001 HD13; 2E001 HE01; 2E001 HE06;
2E001 HF04; 2E001 LA04; 2E001 MA03; 2E001 MA06; 2E001 GA25
Designated States :
(EP-826860)
AT BE CH DE DK FR GB LI NL SE
Citations :
(EP-826860)
Search Report [Examiner]
US5313761(A) (Cat. X,D) [US5313761]
WO9319274(A1) (Cat. X) [WO9319274]
EP0637672(A2) (Cat. X) [EP-637672]
US5514432(A) (Cat. A) [US5514432]
US5617699(A) (Cat. X,P) [US5617699]
Citations :
(US5813191)
Unspecified source
US3345791 [US3345791] 052786130
US5485710 [US5485710] 052786130
US5491953 [US5491953] 052786130
US5553440 [US5553440] 052786130
US5617699 [US5617699] 052786130
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(A) Examiner citations - reason for refusal [19]
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US (A) 005514432 [US5514432]
US (A) 005313761 [US5313761]
Citations :
(AU9734243)
Search Report [Examiner]
US5439716(A) [US5439716]
GB1585823(A) [GB1585823]
US5617699(A) [US5617699]
Abstract :

(EP-826860)

An insulating unit (20) having low thermal conducting marginal edge portions includes a pair of glass sheets (24,26) maintained in a fixed spaced relationship by an edge assembly. The edge assembly includes a spacer frame (22) having a moisture impervious adhesive sealant (46) on outer surface (48) of each of the outer legs (30,32) and base (34) interconnecting the outer legs. The spacer frame is made by joining sections of spacer stock or bending a continuous section of spacer stock. The spacer stock has a pair of outer legs (30,32) joined by the base (34) to provide the spacer stock with a generally U-shaped cross section. The outer legs are formed e.g. each leg has a pair of members (36,42) having a hairpin cross section to reduce the degree of torsional twist of the spacer stock and/or spacer frame with the legs preferably only connected by the base having only one thermal conducting path e.g. through the base from one leg to the other leg. In practice, the spacer frame is used to fabricate the unit by securing a glass sheet (24,26) to each of the outer legs with the moisture impervious adhesive sealant (46). <IMAGE>

Object of Invention :

(EP-826860)

This invention relates to a spacer stock and/or spacer frame and to a multi-sheet insulating unit made using the spacer frame, and a method of making and using a spacer stock.

The object of this invention is reached by a spacer stock as defined in claim 1 and/or a spacer frame as defined in claim 14.

Advantages / Prev. Drawbacks :

(EP-826860)

As can be appreciated, as the length of the sides between the corners of the spacer frame increases the degree of twist of the side of the spacer frame between adjacent corners increases.

As can be appreciated by those skilled in the art of making multi-sheet insulating units, it would be advantageous to improve the mechanical properties of a spacer frame and the insulating unit.

As can be appreciated by those skilled in the art, the compartment 28 is usually filled with an insulating gas e.g. Argon, and it is, therefore, recommended that the sealant layer 46 be thin (the thickness of the layer 46 is measured between adjacent major surface of the sheet and the adjacent outer surface of the first member 36) and long (the length of the layer 46 is measured from the peripheral edge 54 of the outer sheets 24 and 26 upward as viewed in Fig. 2 toward the compartment 28) to reduce the diffusion of the insulating gas out of the compartment 28 of the unit 20 or the environmental air moving into the compartment 28 of the unit 20.

Further, in the practice of the invention, but not limiting thereto, one or more of the glass sheets may be coated and/or uncoated colored sheets for example, but not limiting to the invention, colored sheets of the type disclosed in U.S. Patent Nos. 4,873,206; 4,792,536; 5,030,593 and 5,240,886 which disclosures are hereby incorporated by reference.

Independent Claims :

(EP-826860)

1. An elongated spacer stock (200,320) used in the manufacture of a spacer frame (22,70,84,90,110,120) to separate sheets (24,26,132) of an insulating unit (20), the spacer stock (200,320) comprising:

a base (34,77,122),

a first leg (30,74,80,92,112) connected to the base (34,77,122),

a second leg (32,75,82,94,114) connected to the base (34, 77,122),

wherein

the first and second legs (30,32,74,75,80,82,92,94,112,114) and the base (34,77,122) are connected to provide a generally U-shaped

cross-sectional spacer stock (200,320), and the first and second legs (30,32,74,75,80,82,92,94,112, 114) are formed to reduce torsional twist of the spacer stock (200,320).

Update New docs :

2000-08

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Patent Number :

US5813191 A 19980929 [US5813191] (A) Patent

Application Number :

US70548196 19960829 [1996US-0705481]

Publication actions :

19960829 US-API [POS; EXM]

FILING DETAILS

US70548196 19960829 [1996US-0705481]

19980929 US-A [POS; EXM]

Patent

US5813191 A 19980929 [US5813191]

Action Taken :

19960829 US/AS02-A [NMC]

ASSIGNMENT OF ASSIGNOR'S INTEREST

OWNER: GALLAGHER, RAYMOND G.; EFFECTIVE DATE: 19960828

19960829 US/AS02-A [NMC]

ASSIGNMENT OF ASSIGNOR'S INTEREST

OWNER: PPG INDUSTRIES, INC. INTELLECTUAL PROPERTY DEPT., 3; EFFECTIVE DATE: 19960828

19960829 US/AS-A [NMC]

ASSIGNMENT

OWNER: PPG INDUSTRIES, INC., PENNSYLVANIA; EFFECTIVE DATE: 19960828

ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR: GALLAGHER, RAYMOND

G.; REEL/FRAME: 008219/0743

19990209 US/AS-A [NMC]

ASSIGNMENT

OWNER: PPG INDUSTRIES OHIO, INC., OHIO; EFFECTIVE DATE: 19990204

ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR: PPG INDUSTRIES,

INC.; REEL/FRAME: 009737/0591

20000829 US/RF-A [OPP]

REISSUE APPLICATION FILED

EFFECTIVE DATE: 19990920

Lasted Event Group :

OPP

Alive

Update Code :

2009-22

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Patent Number :

EP0826860 A2 19980304 [EP-826860]

(A2) Application published without search report

EP0826860 A3 19990310 [EP-826860]

(A3) Search report

EP0826860 B1 20031029 [EP-826860]

(B1) Patent specification

Application Number :

EP97114901 19970828 [1997EP-0114901]

Publication actions :

19970828 EP-API [POS; EXM]

FILING DETAILS

EP97114901 19970828 [1997EP-0114901]

19980304 EP-A2 [POS; EXM]

Application published without search report
EP0826860 A2 19980304 [EP-826860]
19990310 EP-A3 [POS; EXM]
Search report
EP0826860 A3 19990310 [EP-826860]
20031029 EP-B1 [POS; PIF]
Patent specification
EP0826860 B1 20031029 [EP-826860]

Action Taken :

19980304 EP/AK-A [POS; ADM]
DESIGNATED CONTRACTING STATES:
BENANNTE VERTRAGSSTAATEN
AT BE CH DE DK FR GB LI NL SE

19980304 EP/AX-A [POS; ADM]
EXTENSION OF THE EUROPEAN PATENT TO
ERSTRECKUNG DES EUROPÄISCHEN PATENTS AUF
AL;LT;LV;RO;SI

19990310 EP/AK-A [POS; ADM]
DESIGNATED CONTRACTING STATES:
BENANNTE VERTRAGSSTAATEN
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

19990310 EP/AX-A [POS; ADM]
EXTENSION OF THE EUROPEAN PATENT TO
ERSTRECKUNG DES EUROPÄISCHEN PATENTS AUF
AL;LT;LV;RO;SI

19990707 EP/RAP1-A [NMC]
APPLICANT REASSIGNMENT (CORRECTION)
ANMELDER UEBERTRAGUNG (KORR.)
OWNER: PPG INDUSTRIES OHIO, INC.

19991103 EP/17P-A [POS; EXM]
REQUEST FOR EXAMINATION FILED
PRUEFUNGSANTRAG GESTELLT
EFFECTIVE DATE: 19990909

19991124 EP/AKX-A [POS; ADM; PIF]
PAYMENT OF DESIGNATION FEES
ZAHLUNG VON BENENNUNGSGEBUEHREN
AT BE CH DE DK FR GB LI NL SE

20001025 EP/17Q-A [POS; EXM]
FIRST EXAMINATION REPORT
ERSTER PRUEFUNGSBESCHEID
EFFECTIVE DATE: 20000908

20031029 EP/AK-A [POS; ADM]
DESIGNATED CONTRACTING STATES:
BENANNTE VERTRAGSSTAATEN
AT BE CH DE DK FR GB LI NL SE

20031029 EP/REG-A; GB/FG4D [POS; PIF]
REFERENCE TO A NATIONAL CODE
GB: EUROPEAN PATENT GRANTED
Corresponding cc: GB

20031031 EP/REG-A; CH/EP [POS; ENP]
REFERENCE TO A NATIONAL CODE
CH: ENTRY IN THE NATIONAL PHASE
CH: EINTRITT IN DIE NATIONALE PHASE

Corresponding cc: CH

20031114 EP/REG-A; CH/NV [NMC]
REFERENCE TO A NATIONAL CODE
CH: NEW AGENT
CH: NEUER VERTRETER/NOUVEAUX MANDATAIRES/NUOVI MANDATARI
Corresponding cc: CH
REPRESENTATIVE: ISLER & PEDRAZZINI AG

20031204 EP/REF-A [ENP]
CORRESPONDS TO:
ENTSPRICHT
Corresponding Pat: DE 69725806 20031204 [DE69725806]

20040216 EP/REG-A; DK/T3 [POS; EXM; ENP]
REFERENCE TO A NATIONAL CODE
DK: TRANSLATION OF EP PATENT
Corresponding cc: DK

20040729 EP/PGFP-A [POS; PIF]
POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
Corresponding cc: NL
PAYMENT DATE: 20040729; PAYMENT YEAR: 08

20040803 EP/PGFP-A [POS; PIF]
POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
Corresponding cc: AT
PAYMENT DATE: 20040803; PAYMENT YEAR: 08

20040806 EP/ET-A [POS; ENP]
FR: TRANSLATION FILED
FR: TRADUCTION A ETE REMISE

20040819 EP/PGFP-A [POS; PIF]
POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
Corresponding cc: FR
PAYMENT DATE: 20040819; PAYMENT YEAR: 08

20040819 EP/PGFP-A [POS; PIF]
POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
Corresponding cc: SE
PAYMENT DATE: 20040819; PAYMENT YEAR: 08

20040823 EP/PGFP-A [POS; PIF]
POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
Corresponding cc: CH
PAYMENT DATE: 20040823; PAYMENT YEAR: 08

20040824 EP/PGFP-A [POS; PIF]
POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
Corresponding cc: DK
PAYMENT DATE: 20040824; PAYMENT YEAR: 08

20040917 EP/PGFP-A [POS; PIF]
POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
Corresponding cc: BE
PAYMENT DATE: 20040917; PAYMENT YEAR: 08

20041020 EP/26N-A [POS; OPP]
NO OPPOSITION FILED
KEIN EINSPRUCH EINGELEGT
EFFECTIVE DATE: 20040730

20050301 EP/PG25-A [NEG; RLW]
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT.
OFFICE TO EPO
Corresponding cc: DE
EFFECTIVE DATE: 20050301
LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES

20050828 EP/PG25-A [NEG; RLW]
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT.
OFFICE TO EPO
Corresponding cc: AT
EFFECTIVE DATE: 20050828
LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES

20050829 EP/PG25-A [NEG; RLW]
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT.
OFFICE TO EPO
Corresponding cc: SE
EFFECTIVE DATE: 20050829
LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES

20050831 EP/PG25-A [NEG; RLW]
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT.
OFFICE TO EPO
Corresponding cc: BE
EFFECTIVE DATE: 20050831
LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES

20050831 EP/PG25-A [NEG; RLW]
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT.
OFFICE TO EPO
Corresponding cc: DK
EFFECTIVE DATE: 20050831
LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES

20050831 EP/PG25-A [NEG; RLW]
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT.
OFFICE TO EPO
Corresponding cc: LI
EFFECTIVE DATE: 20050831
LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES

20050831 EP/PG25-A [NEG; RLW]
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT.
OFFICE TO EPO
Corresponding cc: CH
EFFECTIVE DATE: 20050831
LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES

20060301 EP/PG25-A [NEG; RLW]
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT.
OFFICE TO EPO
Corresponding cc: NL
EFFECTIVE DATE: 20060301
LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES

20060413 EP/REG-A; CH/PL [NEG; RLW]
REFERENCE TO A NATIONAL CODE
CH: PATENT CEASED
CH: LOESCHUNG/RADIATION/RADIAZION
Corresponding cc: CH

20060418 EP/REG-A; DK/EBP [NEG; RLW]

REFERENCE TO A NATIONAL CODE
DK: PATENT LAPSED
Corresponding cc: DK

20060425 EP/EUG-A [NEG; RLW]
SE: EUROPEAN PATENT HAS LAPSED
SE: EUROPEISK PATENT HAR UPPHOERT ATT GAELLA

20060428 EP/PG25-A [NEG; RLW]
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT.
OFFICE TO EPO
Corresponding cc: FR
EFFECTIVE DATE: 20060428
LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES

20060501 EP/NLV4-A [NEG; RLW]
NL: LAPSED OR ANULLED DUE TO NON-PAYMENT OF THE ANNUAL FEE
NL: VERVALLEN WEGENS NIET BETALEN VAN EEN JAARCIJNS
EFFECTIVE DATE: 20060301

20060526 EP/REG-A; FR/ST [NEG; RLW]
REFERENCE TO A NATIONAL CODE
FR: LAPSED
FR: CONSTATATION DE DECHEANCES
Corresponding cc: FR
EFFECTIVE DATE: 20060428

20060825 EP/PGFP-A [POS; PIF]
POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
Corresponding cc: GB
PAYMENT DATE: 20060825; PAYMENT YEAR: 10

20071231 EP/BERE-A [NEG; RLW]
BE: LAPSED
BE: DECHU
OWNER: *PPG INDUSTRIES OHIO INC.; EFFECTIVE DATE: 20050831

20080102 EP/PGFP-A [POS; PIF]
POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
Corresponding cc: GB
PAYMENT DATE: 20070830; PAYMENT YEAR: 11

20081031 EP/PGFP-A [POS; PIF]
POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
Corresponding cc: GB
PAYMENT DATE: 20050824; PAYMENT YEAR: 09

20081231 EP/PGFP-A [POS; PIF]
POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
Corresponding cc: GB
PAYMENT DATE: 20080827; PAYMENT YEAR: 12

Lasted Event Group :

PIF
Alive

Update Code :
2009-03

3 / 6 LGST - @EPO

Patent Number :

NZ328488 A 19980924 [NZ-328488] (A) Patent application

Application Number :

NZ32848897 19970804 [1997NZ-0328488]

Publication actions :

19970804 NZ-API [POS; EXM]
FILING DETAILS
NZ32848897 19970804 [1997NZ-0328488]
19980924 NZ-A [POS; EXM]
Patent application
NZ328488 A 19980924 [NZ-328488]

Action Taken :

20040827 NZ/RENEW-A [POS; PIF]
RENEWAL

Lasted Event Group :

PIF
Alive

Update Code :

2007-06

4 / 6 LGST - ©EPO

Patent Number :

DE69725806 D1 20031204 [DE69725806]
(D1) Granted EP number in Bulletin
DE69725806 T2 20040819 [DE69725806]
(T2) Trans. of EP patent

Application Number :

DE69725806T 19970828 [1997DE-6025806]

Publication actions :

19970828 DE-API [POS; EXM]
FILING DETAILS
DE69725806T 19970828 [1997DE-6025806]
20031204 DE-D1 [POS; EXM]
Granted EP number in Bulletin
DE69725806 D1 20031204 [DE69725806]
20040819 DE-T2 [POS; EXM]
Trans. of EP patent
DE69725806 T2 20040819 [DE69725806]

Action Taken :

20041125 DE/8364-A [POS; OPP]
NO OPPOSITION DURING TERM OF OPPOSITION
EINSPRUCHSFRIST ABGELAUFEN OHNE DASS EINSPRUCH ERHOEBEN WURDE

20050609 DE/8339-A [NEG; NIF]
CEASED/NON-PAYMENT OF THE ANNUAL FEE
WEGEN NICHTZ. D. JAHRESGEB. ERLOSCHEN

Lasted Event Group :

NIF
Dead

Update Code :

2005-23

5 / 6 LGST - ©EPO

Patent Number :

CA2213026 A1 19980228 [CA2213026]
(A1) Application laid open
CA2213026 C 20000523 [CA2213026]
(C) Patent (second level)

Application Number :

CA2213026 19970826 [1997CA-2213026]

Publication actions :

19970826 CA-API [POS; EXM]
FILING DETAILS
CA2213026 19970826 [1997CA-2213026]

19980228 CA-A1 [POS; EXM]
Application laid open
CA2213026 A1 19980228 [CA2213026]
20000523 CA-C [POS; PIF]
Patent (second level)
CA2213026 C 20000523 [CA2213026]

Action Taken :

19970826 CA/EEER-A [POS; EXM]
EXAMINATION REQUEST

20080826 CA/MKLA-A [NEG; NIF]
LAPSED

Lasted Event Group :

NIF
Dead

Update Code :

2008-44

6 / 6 LGST - @EPO

Patent Number :

AT253166 T 20031115 [ATE253166] (T) Translation of European patent
specification

Application Number :

AT97114901T 19970828 [1997AT-0114901]

Publication actions :

19970828 AT-API [POS; EXM]
FILING DETAILS
AT97114901T 1997082 [1997AT-0114901]
20031115 AT-T [POS; EXM]
Translation of European patent specification
AT253166 T 20031115 [ATE253166]

Action Taken :

20040415 AT/UEP-T [POS; EXM; ENP]
PUBLICATION OF TRANSLATION OF EUROPEAN PATENT SPECIFICATION
UEBERSETZUNG DER EUROPÄISCHEN PATENTSCHRIFT AUSGEGEBEN
Corresponding Pat: EP 0826860 0 [EP-826860]

20060515 AT/REN-T [NEG; NIF]
CEASED DUE TO NON-PAYMENT OF THE ANNUAL FEE
ERLOSCHEN INFOLGE NICHTZ. D. JAHRESGEB.

Lasted Event Group :

NIF
Dead

Update Code :

2006-23

1 / 1 CRXX - @CLAIMS/RRX

Patent Number :

5,813,191 A 19980929 [US5813191]

Patent Assignee :

PPG Industries Inc

Actions :

19990209 REASSIGNED
ASSIGNMENT OF ASSIGNORS INTEREST

Assignor: PPG INDUSTRIES, INC., DATE SIGNED: 02/04/1999

Assignee: PPG INDUSTRIES OHIO, INC., 3800 WEST 143RD STREET, CLEVELAND,
OHIO, 44111

Reel 009737/Frame 0591

Contact: PPG INDUSTRIES, INC., JOHN K. WILLIAMSON, IP DEPT., 39TH FLOOR,
ONE PPG PLACE, PITTSBURGH, PA 15272

19990920 REISSUE REQUESTED
ISSUE DATE OF O.G.: 20000829
REISSUE REQUEST NUMBER: 09/399545
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 3621

Reissue Patent Number:

1 / 1 PLUSPAT - ©Questel - image

Patent Number :

US5813191 A 19980929 [US5813191]

Title :

(A) Spacer frame for an insulating unit having strengthened sidewalls to resist torsional twist

Patent Assignee :

(A) PPG INDUSTRIES INC (US)

Patent Assignee :

PPG Industries, Inc., Pittsburgh PA [US]

Inventor(s) :

(A) GALLAGHER RAYMOND G (US)

Application Nbr :

US70548196 19960829 [1996US-0705481]

Priority Details :

US70548196 19960829 [1996US-0705481]

Intl Patent Class :

(A) A47G-001/00 E04C-002/54

IPC Advanced All :

E06B-003/66 [2006-01 A F I R M JP]; E04B-001/80 [2006-01 A L I R M JP];
E06B-003/663 [2006-01 A - I R M EP]; E06B-005/00 [2006-01 A L I R M JP]
E06B-003/673 [2006-01 A - N R M EP]

IPC Core All :

E04B-001/80 [2006 C L I R M JP]; E06B-003/66 [2006 C - I R M EP];
E06B-005/00 [2006 C L I R M JP]

EPO ECLA Class :

E06B-003/663B

EPO ICO Class :

P06B-003/663B10
P06B-003/663B402
P06B-003/673B2B

:

ORIGINAL (O) : 052786130; CROSS-REFERENCE (X) : 052204500 052204595
052786100

Document Type :

Corresponding document

Citations :

Unspecified source

US3345791 [US3345791] 052786130
US5485710 [US5485710] 052786130
US5491953 [US5491953] 052786130
US5553440 [US5553440] 052786130
US5617699 [US5617699] 052786130

Publication Stage :

(A) Patent

Abstract :

A spacer stock has a pair of outer legs joined by a base to provide the spacer stock with a generally U-shaped cross section. The outer legs are formed e.g. each leg has a pair of members having a hairpin cross section to reduce the degree of torsional twist of the spacer stock and/or spacer frame with the legs preferably only connected by the base having only one thermal conducting path e.g. through the base from one leg to the other leg. The spacer stock may be shaped or sections of spacer stock joined to provide a spacer frame. The spacer frame may be used to fabricate a multi-sheet glazing unit e.g. by securing a sheet to each of the outer legs with moisture impervious adhesive or sealant.

1 / 1 LGST - ©EPO

Patent Number :

US5813191 A 19980929 [US5813191] (A) Patent

Application Number :

US70548196 19960829 [1996US-0705481]

Publication actions :

19960829 US-API [POS; EXM]

FILING DETAILS

US70548196 19960829 [1996US-0705481]

19980929 US-A [POS; EXM]

Patent

US5813191 A 19980929 [US5813191]

Action Taken :

19960829 US/AS02-A [NMC]

ASSIGNMENT OF ASSIGNOR'S INTEREST

OWNER: GALLAGHER, RAYMOND G.; EFFECTIVE DATE: 19960828

19960829 US/AS02-A [NMC]

ASSIGNMENT OF ASSIGNOR'S INTEREST

OWNER: PPG INDUSTRIES, INC. INTELLECTUAL PROPERTY DEPT., 3; EFFECTIVE
DATE: 19960828

19960829 US/AS-A [NMC]

ASSIGNMENT

OWNER: PPG INDUSTRIES, INC., PENNSYLVANIA; EFFECTIVE DATE: 19960828

ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR: GALLAGHER, RAYMOND
G.; REEL/FRAME: 008219/0743

19990209 US/AS-A [NMC]

ASSIGNMENT

OWNER: PPG INDUSTRIES OHIO, INC., OHIO; EFFECTIVE DATE: 19990204

ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR: PPG INDUSTRIES,
INC.; REEL/FRAME: 009737/0591

20000829 US/RF-A [OPP]

REISSUE APPLICATION FILED

EFFECTIVE DATE: 19990920

Lasted Event Group :

OPP

Alive

Update Code :

2009-22

1 / 1 CRXX - ©CLAIMS/RRX

Patent Number :

5,813,191 A 19980929 [US5813191]

Patent Assignee :

PPG Industries Inc

Actions :

19990209 REASSIGNED

ASSIGNMENT OF ASSIGNORS INTEREST

Assignor: PPG INDUSTRIES, INC., DATE SIGNED: 02/04/1999

Assignee: PPG INDUSTRIES OHIO, INC., 3800 WEST 143RD STREET, CLEVELAND,
OHIO, 44111

Reel 009737/Frame 0591

Contact: PPG INDUSTRIES, INC., JOHN K. WILLIAMSON, IP DEPT., 39TH FLOOR,
ONE PPG PLACE, PITTSBURGH, PA 15272

19990920 REISSUE REQUESTED

ISSUE DATE OF O.G.: 20000829
REISSUE REQUEST NUMBER: 09/399545
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 3621

Reissue Patent Number: